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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/615,666	Applicant(s) BROOKS ET AL.	
	Examiner Edna Wong	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2007 and 24 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,22,23 and 25-27 is/are pending in the application.
- 4a) Of the above claim(s) 25 and 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,22,23 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :February 12, 2007 and August 8, 2007.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 8, 2007 has been entered.

This is in response to the Amendment After Final dated August 8, 2007. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Arguments

Election/Restrictions

Applicant's election of the species of direct resonance conditioning frequencies and a membrane/electrode assembly in the reply filed on September 24, 2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The present claims recites:

1. (Currently amended). A method for conditioning at least one conditionable participant to form a conditioned participant in a fuel cell reaction system

comprising:

applying at least one conditioning energy, excluding a spectral conditioning catalyst, to said at least one conditionable participant to cause at least one of the formation, stimulation and stabilization of said at least one conditioned participant, whereby said at least one conditioning frequency comprises at least one frequency selected from the group consisting of **direct resonance conditioning frequencies**, harmonic resonance conditioning frequencies and non-harmonic heterodyne conditioning resonance frequencies.

5. (Currently amended). The method of claim 1, wherein said fuel cell reaction system comprises:

at least one member selected from the group consisting of an alkaline fuel cell, a direct methanol fuel cell, **a membrane/electrode assembly**, a molten carbonate fuel cell, a phosphoric acid fuel cell, a polymer electrolyte membrane fuel cell, a protonic-ceramic fuel cell, a regenerative fuel cell and a solid oxide fuel cell.

22. (Currently amended). A method for conditioning at least one conditionable participant in a fuel cell reaction system comprising:

applying at least one conditioning energy, excluding a spectral conditioning catalyst, to said at least one conditionable participant to cause at least one of the formation, stimulation and stabilization of at least one conditioned participant, whereby said at least one frequency comprises at least one frequency selected from the group consisting of **direct resonance conditioning frequencies**, harmonic resonance conditioning frequencies, non-harmonic heterodyne conditioning resonance frequencies, electronic conditioning frequencies, vibrational conditioning frequencies, rotational conditioning frequencies, rotational-vibrational conditioning frequencies, fine splitting conditioning frequencies, hyperfine splitting conditioning frequencies, electric field splitting conditioning frequencies, magnetic field splitting conditioning frequencies, cyclotron resonance conditioning frequencies, orbital conditioning frequencies and nuclear conditioning frequencies.

23. (Previously presented). The method of claim 22, wherein said fuel cell reaction system comprises at least one member selected from the group consisting of an alkaline fuel cell, a direct methanol fuel cell, **a membrane/electrode assembly**, a molten carbonate fuel cell, a phosphoric acid fuel cell, a polymer electrolyte membrane fuel cell, a protonic-ceramic fuel cell, a regenerative fuel cell and a solid oxide fuel cell.

Art Unit: 1795

25. (New). A method for conditioning at least one conditionable participant in a fuel cell reaction system comprising:

conditioning targeting, excluding a spectral conditioning catalyst.

26. (New). A method for conditioning at least one conditionable participant in a fuel cell reaction system comprising:

direct resonance conditioning targeting, excluding a spectral conditioning catalyst.

Claim **25** has nothing to do with any of the elected species. Thus, it is unclear how this claim is readable on the elected species when it does not positively claim any of the elected species or have a dependent claim directed towards any of the elected species. Thus, the Examiner deems that claim 25 is not readable on the elected species.

The requirement is still deemed proper and is therefore made FINAL.

Accordingly, claims **25 and 27** are withdrawn from consideration as being directed to a non-elected invention.

Claim Objections

Claims **2 and 5** have been objected to because of minor informalities.

The objection of claims 2 and 5 has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 112

Claims **1-5** have been rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection of claims 1-5 under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicants' amendment.

Double Patenting

I. Claims 1-6 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-26 of copending Application No. 10/203,797 (Brooks et al.).

The rejection of claims 1-6 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-26 of copending Application No. 10/203,797 (Brooks et al.) is as applied in the Office Actions dated June 15, 2006 and February 8, 2007 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants request that the obvious-type double patenting rejection be held in abeyance until indication of allowable subject matter herein.

In response, the obvious-type double patenting rejection has been held in abeyance.

II. Claims 1-6 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of copending

Application No. **10/507,659** (Brooks et al.).

The rejection of claims 1-6 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 10/507,659 (Brooks et al.) is as applied in the Office Action dated June 15, 2006 and February 8, 2007 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants request that the obvious-type double patenting rejection be held in abeyance until indication of allowable subject matter herein.

In response, the obvious-type double patenting rejection has been held in abeyance.

III. Claims **1-6** have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims **1-6** of copending Application No. **10/507,660** (Brooks et al.).

The rejection of claims 1-6 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 10/507,660 (Brooks et al.) is as applied in the Office Action dated June 15, 2006 and February 8, 2007 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants request that the obvious-type double patenting rejection be held in abeyance until indication of allowable subject matter herein.

In response, the obvious-type double patenting rejection has been held in abeyance.

IV. Claims **1-6** have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims **1-6** of copending Application No. **10/508,462** (Brooks et al.).

The rejection of claims 1-6 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 10/508,462 (Brooks et al.) is as applied in the Office Action dated June 15, 2006 and February 8, 2007 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants request that the obvious-type double patenting rejection be held in abeyance until indication of allowable subject matter herein.

In response, the obvious-type double patenting rejection has been held in abeyance.

Claim Rejections - 35 USC § 102

I. Claims **1-4** have been rejected under 35 U.S.C. 102(b) as being anticipated by **Brooks et al.** (US Patent No. 6,033,531).

The rejection of claims 1-4 under 35 U.S.C. 102(b) as being anticipated by Brooks et al. has been withdrawn in view of Applicants' amendment.

II. Claims 1-6 have been rejected under 35 U.S.C. 102(e) as being anticipated by **Kawamura et al.** (US Patent No. 6,706,431 B2).

The rejection of claims 1-6 under 35 U.S.C. 102(e) as being anticipated by Kawamura et al. has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 102/103

I. Claim 22 has been rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Brooks et al.** (US Patent No. 6,033,531).

The rejection of claim 22 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Brooks et al. is as applied in the Office Action dated February 8, 2007 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants state that the inclusion, of the negative limitation "excluding **a spectral conditioning catalyst**" in each of the pending claims render all of the claims patentable over all the art of record.

In response, Brooks excludes a spectral conditioning catalyst because Brooks teaches **a spectral catalyst comprising the spectral pattern** of the physical platinum catalyst (col. 11, lines 8-10).

What is the difference between the spectral conditioning catalyst and the spectral catalyst comprising the spectral pattern?

Applicants notes that several defined terms are now utilized in each of the pending claims. It is important for the Examiner to refer to these definitions to understand completely the metes and bounds of the pending claims.

In response, the claims as presently written are broader in scope than what is disclosed in Applicants' specification. It is well settled that unpatented claims are given the broadest, most reasonable interpretation and that limitations are not read into the claims without a proper claim basis therefor. *In re Prater* 415 F. 2d 1393, 162 USPQ 541 (CCPA 1969); *In re Zeltz* 893 F. 2d 319, 13 USPQ 1320.

II. Claims **22 and 23** have been rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Kawamura et al.** (US Patent No. 6,706,431 B2).

The rejection of claims 22 and 23 under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kawamura et al. is as applied in the Office Action dated February 8, 2007 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants state that the inclusion, of the negative limitation "excluding a spectral conditioning catalyst" in each of the pending claims render all of the claims patentable over all the art of record.

In response, Kawamura teaches increasing the efficiency (= *conditioning*) of the catalytic function of the fuel cell by irradiating the catalyst (= *a conditionable participant*)

with blue color diode light, and/or by conducting electric current (= a *conditioning energy*) to the catalyst (col. 3, lines 27-31).

How do the blue color diode light and/or the electric current not read on Applicants' spectral conditioning or spectral energy species?

Applicants notes that several defined terms are now utilized in each of the pending claims. It is important for the Examiner to refer to these definitions to understand completely the metes and bounds of the pending claims.

In response, the claims as presently written are broader in scope than what is disclosed in Applicants' specification. It is well settled that unpatented claims are given the broadest, most reasonable interpretation and that limitations are not read into the claims without a proper claim basis therefor. *In re Prater* 415 F. 2d 1393, 162 USPQ 541 (CCPA 1969); *In re Zeltz* 893 F. 2d 319, 13 USPQ 1320.

Response to Amendment

Claim Rejections - 35 USC § 112

I. Claims **1-6 and 22-23** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1

lines 5, "said at least one conditioned participant" lacks antecedent basis. See

claim 1, line 2.

lines 5-6, "said at least one conditioning frequency" lacks antecedent basis.

Claim 22

lines 5-6, "said at least one frequency" lacks antecedent basis.

II. Claims **2-6 and 23** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: between the fuel cell reaction system and the "applying" step.

Claim 2-6 and 23 are further limiting the fuel cell reaction system. The fuel cell reaction system is only recited in the preamble of the independent claims and has nothing to do with the "applying" step recited in the body of the claim, e.g., the "applying" step does not even use the fuel cell reaction system in any way.

Double Patenting

I. Claims **22 and 23** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims **1-26** of copending Application No. **10/203,797** (Brooks et al.). Although the conflicting claims

are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

applying at least one spectral energy provider to said reaction system, said spectral energy provider being selected from the group consisting of, spectral energy catalyst, spectral catalyst, spectral energy pattern, spectral pattern, catalytic spectral energy pattern, catalytic spectral pattern, applied spectral energy pattern, and spectral environmental reaction conditions, said at least one spectral energy provider providing energy to at least one member of said reaction system by interacting with at least one frequency thereof, excluding electronic and vibrational frequencies in any of said reactant, to achieve harmonic resonance therewith and to produce at least one desired reaction product.

The independent claim of the instant application recites similar limitations, either alone or in combination with its dependent claims, as that of the claims of the copending application wherein the claims of the instant application are encompassed by the claims of the copending application. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application. Therefore, the claims would have been obvious variants over each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

II. Claim **26** is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims **1-26** of copending Application No. **10/203,797** (Brooks et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

forming a reaction system; and

targeting said reaction system with at least one method selected from the group consisting of direct resonance targeting, harmonic targeting and non-harmonic heterodyne targeting.

The independent claim of the instant application recites similar limitations, either alone or in combination with its dependent claims, as that of the claims of the copending application wherein the claims of the instant application encompasses the claims of the copending application. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application. Therefore, the claims would have been obvious

variants over each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

III. Claims **22 and 23** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims **1-55** of copending Application No. **10/507,659** (Brooks et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

48. A method for conditioning at least one conditionable participant in a cell reaction system comprising:

applying at least one conditioning frequency to at least one conditionable participant to cause at least one of the formation, stimulation and stabilization of at least one conditioned participant, whereby said at least one frequency comprises at least one frequency selected from the group consisting of direct resonance conditioning frequencies, harmonic resonance conditioning frequencies, non-harmonic heterodyne conditioning resonance frequencies, electronic conditioning frequencies, vibrational conditioning frequencies, rotational conditioning frequencies, rotational-vibrational

conditioning frequencies, fine splitting conditioning frequencies, hyperfine splitting conditioning frequencies, electric field splitting conditioning frequencies, magnetic field conditioning splitting frequencies, cyclotron resonance conditioning frequencies, orbital conditioning frequencies and nuclear conditioning frequencies (copending application '659).

The independent claim of the instant application recites similar limitations, either alone or in combination with its dependent claims, as that of the claims of the copending application wherein the claims of the instant application are encompassed by the claims of the copending application. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application. Therefore, the claims would have been obvious variants over each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

IV. Claim **26** is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims **1-55** of copending Application No. **10/507,659** (Brooks et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced

compending application and the instant application are claiming common subject matter, as follows:

direct resonance conditioning targeting.

The independent claim of the instant application recites similar limitations, either alone or in combination with its dependent claims, as that of the claims of the compending application wherein the claims of the instant application encompasses the claims of the compending application. The subject matter claimed in the instant application is fully disclosed in the referenced compending application and would be covered by any patent granted on that compending application. Therefore, the claims would have been obvious variants over each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

V. Claims **22 and 23** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims **1-53** of compending Application No. **10/507,660** (Brooks et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the referenced compending application and would be covered by any patent granted on that compending application since the referenced compending application and the instant application are claiming common subject matter, as follows:

48. A method for conditioning at least one conditionable participant comprising:
applying at least one conditioning frequency to at least one conditionable participant to cause at least one of the formation, stimulation and stabilization of at least one conditioned participant, whereby said at least one frequency comprises at least one frequency selected from the group consisting of direct resonance conditioning frequencies, harmonic resonance conditioning frequencies, non-harmonic heterodyne conditioning resonance frequencies, electronic conditioning frequencies, vibrational conditioning frequencies, rotational conditioning frequencies, rotational-vibrational conditioning frequencies, fine splitting conditioning frequencies, hyperfine splitting conditioning frequencies, electric field splitting conditioning frequencies, magnetic field conditioning splitting frequencies, cyclotron resonance conditioning frequencies, orbital conditioning frequencies and nuclear conditioning frequencies (copending application '660).

The independent claim of the instant application recites similar limitations, either alone or in combination with its dependent claims, as that of the claims of the copending application wherein the claims of the instant application are encompassed by the claims of the copending application. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application. Therefore, the claims would have been obvious variants over each other.

This is a provisional obviousness-type double patenting rejection because the

conflicting claims have not in fact been patented.

VI. Claim **26** is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims **1-53** of copending Application No. **10/507,660** (Brooks et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

direct resonance conditioning targeting.

The independent claim of the instant application recites similar limitations, either alone or in combination with its dependent claims, as that of the claims of the copending application wherein the claims of the instant application encompasses the claims of the copending application. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application. Therefore, the claims would have been obvious variants over each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

VII. Claims **22 and 23** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims **1-6** of copending Application No. **10/508,462** (Brooks et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

applying at least one conditioning frequency to at least one conditionable participant to cause at least one of the formation, stimulation and stabilization of at least one conditioned participant, whereby said at least one conditioning frequency comprises at least one frequency selected from the group consisting of direct resonance conditioning frequencies, harmonic resonance conditioning frequencies and non-harmonic heterodyne conditioning resonance frequencies.

The independent claim of the instant application recites similar limitations, either alone or in combination with its dependent claims, as that of the claims of the copending application wherein the claims of the instant application are encompassed by the claims of the copending application. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application. Therefore, the claims would have been obvious variants over each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

VIII. Claim **26** is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims **1-6** of copending Application No. **10/508,462** (Brooks et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

targeting at least one participant in said crystallization reaction system with at least one spectral energy pattern to cause at least one of the formation, stimulation and stabilization of at least one component in said crystallization reaction system.

The independent claim of the instant application recites similar limitations, either alone or in combination with its dependent claims, as that of the claims of the copending application wherein the claims of the instant application are encompassed by the claims of the copending application. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application. Therefore, the claims would have been obvious variants over each other.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102/103

I. Claims **1-4 and 26** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Brooks et al.** (US Patent No. 6,033,531).

Brooks teaches a method for conditioning at least one conditionable participant (= platinum powder) in a fuel cell reaction system ($\text{H}_2 + \text{O}_2 \rightarrow \text{platinum catalyst} \rightarrow \text{H}_2\text{O}$) comprising:

applying at least one conditioning energy, excluding a spectral conditioning catalyst (= spectral catalyst platinum emissions from two parallel Fisher Scientific Hollow Cathode Platinum Lamps), to said at least one conditionable participant (= the traditional physical platinum catalyst) to cause at least one of the formation, stimulation and stabilization of said at least one conditioned participant (= irradiated physical platinum catalyst), whereby said at least one conditioning frequency (= spectral catalyst platinum emissions from two parallel Fisher Scientific Hollow Cathode Platinum Lamps) [col. 11, Example 1; and col. 13, Example 5] comprises direct resonance conditioning frequencies (= *inherent*) [MPEP § 2112(III)].

The conditioned participant (= irradiated physical platinum catalyst) resonantly transfers energy (= the harmonic on a catalyst surface gives a photon energy) with at

least one participant ($= \text{H}_2 + \text{O}_2$) in said fuel cell reaction system ($= \text{H}_2 + \text{O}_2 \rightarrow \text{platinum catalyst} \rightarrow \text{H}_2\text{O}$) to affect at least one reaction pathway ($=$ a rate of reaction) in said fuel cell reaction system (col. 11, Example 1; and col. 13, Example 5).

The method further comprises applying at least one spectral energy pattern to said fuel cell reaction system ($=$ spectral catalyst platinum emissions from two parallel Fisher Scientific Hollow Cathode Platinum Lamps) [col. 13, Example 5].

A rate of at least one reaction in said fuel cell reaction system is accelerated ($=$ a rate of reaction is increased) [col. 13, Example 5].

II. Claims **1-6 and 26** are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Kawamura et al.** (US Patent No. 6,706,431 B2).

Kawamura teaches a method for conditioning at least one conditionable participant ($=$ a catalyst) to form a conditioned participant ($=$ an increased catalytic function) [col. 5, lines 39-43] in a fuel cell reaction system ($=$ a hydrogen and oxygen fuel cell electrode system) [col. 5, lines 49-57] comprising:

applying at least one conditioning energy, excluding a spectral conditioning catalyst ($=$ a blue color diode light and/or a conducting electric current), to said at least one conditionable participant ($=$ a catalyst) to cause at least one of the formation, stimulation and stabilization of said at least one conditioned participant ($=$ an increased catalytic function) [col. 5, lines 39-43], whereby said at least one conditioning frequency

(= a blue color diode light and/or a conducting electric current) comprises direct resonance conditioning frequencies (= *inherent*) [MPEP § 2112(III)].

The conditioned participant (= an increased catalytic function) resonantly transfers energy (= the harmonic on a catalyst surface gives a photon energy) with at least one participant (= hydrogen and oxygen) [col. 5, lines 44-57] in said fuel cell reaction system (= a hydrogen and oxygen fuel cell electrode system) [col. 5, lines 49-57] to affect at least one reaction pathway in said fuel cell reaction system 3 (= the efficiency of the fuel cell may be increased) [col. 2, lines 57-59].

The method further comprises applying at least one spectral energy pattern (= from the blue color diode light and/or the conducting electric current) to said fuel cell reaction system.

A rate of at least one reaction in said fuel cell reaction system is accelerated (= the efficiency of the fuel cell may be increased) [col. 2, lines 57-59].

The fuel cell reaction system comprises a membrane/electrode assembly (= a sandwich-type electrolyte fuel cell, having a first electrode, a second electrode, a second electrode formed from a nano-carbon material and an ion exchange membrane positioned between the first electrode and the second electrode) [col. 2, lines 53-57; and col. 3, lines 41-43].

The fuel cell reaction system comprises a polymer electrolyte membrane fuel cell (= PEM) [col. 2, lines 53-57; and col. 3, lines 41-43].

III. Claims **1, 22 and 26** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Brus et al.** (US Patent No. 4,481,091).

Brus teaches a method for conditioning at least one conditionable participant (= an atom or molecule having at least one absorption wavelength) to form a conditioned participant (= a field enhancing body) in a fuel cell reaction system (MPEP § 2111.02) comprising:

applying at least one conditioning energy, excluding a spectral conditioning catalyst (= a reaction-effecting electromagnetic radiation comprising a given wavelength), to said at least one conditionable participant (= the atom or molecule having at least one absorption wavelength) to cause at least one of the formation, stimulation and stabilization of said at least one conditioned participant (= the field enhancing body having an associated enhanced field), whereby said at least one conditioning frequency (= the reaction-effecting electromagnetic radiation comprising a given wavelength) [col. 10, claim 1] comprises direct resonance conditioning frequencies (= *inherent*) [MPEP § 2112(III)].

IV. Claims **1, 22 and 26** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Cantrell et al.** (US Patent No. 4,690,742).

Cantrell teaches a method for conditioning at least one conditionable participant

(= an isotope in atomic or molecular form) to form a conditioned participant (= an excited isotope) in a fuel cell reaction system (MPEP § 2111.02) comprising:

applying at least one conditioning energy, excluding a spectral conditioning catalyst (= the radiation), to said at least one conditionable participant (= the isotope in atomic or molecular form) to cause at least one of the formation, stimulation and stabilization of said at least one conditioned participant (= the excited isotope), whereby said at least one conditioning frequency (= the radiation) comprises direct resonance conditioning frequencies (= the frequency is tuned near a single narrow resonance associated with the isotope) [col. 12, claim 9].

V. Claims **1, 22 and 26** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Oraevskii** ("Directed Stimulation of Chemical Reactions by Laser Radiation, *P. N. Lebedev Physics Institute, Academy of Sciences of the USSR. Translated from Izvestiya Vysshikh Uchebnykh Zavedenii, Radiofizika*, Vol. 17, No. 4, pp. 608-615 [pp. 458-463], April 1974).

Oraevskii teaches a method for conditioning at least one conditionable participant (= a molecule) in a fuel cell reaction system (MPEP § 2111.02) comprising:

applying at least one conditioning energy, excluding a spectral conditioning catalyst (= the radiation pulse), to said at least one conditionable participant (= a molecule) to cause at least one of the formation, stimulation and stabilization of said at least one conditioned participant (= the excitation of high vibrational levels of a

molecule), whereby said at least one conditioning frequency (= the radiation pulse) comprises direct resonance conditioning frequencies (= vibration-vibration energy exchange) [page 459].

Citations

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kendrick ("Resonance Structure in Chemical Reactions", *Theoretical Chemistry & Molecular Physics*, T-12, April 2000, pp. 1-2) is cited to teach that the identification of dynamical scattering resonances is a "spectroscopy of the transition state" of a bimolecular chemical reaction (page 1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

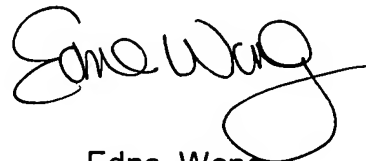
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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A handwritten signature in black ink, appearing to read "Edna Wong", with a stylized, looping flourish at the end.

Edna Wong
Primary Examiner
Art Unit 1795

EW
October 23, 2007